BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) for a Certificate of Public Convenience and Necessity: Eldorado-Lugo-Mohave Series Capacitor Project.	A.18-05-007

SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) PETITION FOR MODIFICATION OF DECISION 20-08-032

ROBERT PONTELLE
TAMMY L. JONES
LAUREN P. GOSCHKE

Attorneys for
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770
Telephone: (626) 302-6025
E-mail: Robert.Pontelle@sce.com

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I.

INTRODUCTION

Pursuant to California Public Utilities Commission (Commission or CPUC) Rule of Practice and Procedure 16.4 and Ordering Paragraph (OP) 5 of Commission Decision (D.) 20-08-032, *Decision Granting Certificate of Public Convenience and Necessity For The Eldorado-Lugo-Mohave Series Capacitor Project* (D.20-08-032 or Decision),[1] Southern California Edison Company (SCE) respectfully submits this Petition for Modification (PFM or Petition). In particular, by this PFM, SCE requests the CPUC adjust the maximum reasonable and prudent cost (MRPC) established in the Decision for the Eldorado-Lugo-Mohave Series Capacitor

[1] OP # 5 of D.20-08-032 states:

> "Pursuant to Public Utilities Code Section 1005.5(b), at any point during the Eldorado-Lugo-Mohave Series Capacitor Project (Project), but prior to any expenditures in excess of the maximum reasonable and prudent cost determined in this decision, Southern California Edison Company must file a formal Petition for Modification with the Commission for consideration of a revised determination of the reasonable and prudent maximum cost of the Project."

Project (ELM Project). Pursuant to Rule 16.4(b), SCE's proposed revisions to D.20-08-032 are included with this PFM as Appendix A. In addition, this PFM is supported by the Declaration of Selya Juliano Arce (attached as Appendix B) and the Declaration of Jack Huang (attached as Appendix C).

The ELM Project is a policy-driven upgrade identified by the California Independent System Operator (CAISO), the purpose of which is to integrate renewable generation by relieving deliverability constraints in several areas, thereby enabling additional integration of renewable energy generation in support of California's renewable energy goals. The Project will also provide system reliability to the Los Angeles Basin and the entire CAISO grid by increasing the capacity of three existing transmission lines.[2] Because the ELM Project is a critical transmission project needed to meet the aforementioned goals, SCE seeks to bring the project online in December 2023.

In D.20-08-032, the Commission granted a Certificate of Public Convenience and Necessity (CPCN) for the ELM Project, and established a total MRPC of $239 million (2019 constant $), including $220 million in direct costs (2019 constant $) and $19 million of contingency (2019 constant $).[3] The CPUC, recognizing that project costs for large construction projects can change, also ordered SCE to file a PFM requesting an increase to the total MRPC for the ELM Project prior to exceeding the amount identified in D.20-08-032. As explained in detail below, the cost to construct the ELM Project has increased and is now estimated at $295 million.

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[2] The ELM Project would increase the capacity of the Eldorado-Lugo 500 kilovolt (kV) transmission line, the Lugo-Mohave 500 kV transmission line, and the Eldorado-Mohave 500 kV transmission line.

[3] To avoid confusion due to the different basis of costs, unless otherwise indicated, all costs utilized throughout this PFM have been rounded to the nearest million and are presented in 2019 constant dollars. All nominal costs from years prior to and after 2019 have been converted into 2019 constant dollars using a blend of historical and forecast escalation rates provided by S&P Global Market Intelligence, formerly IHS Global Markit. Specifically, SCE uses the Transmission Plant – Electric Utility Construction, Pacific, forecast. This forecast is as of April 18, 2023.

Accordingly, SCE files this PFM pursuant to the CPUC Rules of Practice and Procedure Rule 16.4, Public Utilities Code Section 1005.5(b), and OP 5 of D.20-08-032, seeking Commission approval of an increase in the MRPC of the ELM Project to $295 million, consisting of a total of $276 million of direct costs and $19 million of contingency.

II.

SUMMARY OF REQUEST FOR RELIEF

For the reasons explained in this PFM and consistent with Public Utilities Code Section 1005.5(b), SCE respectfully requests that, as soon as reasonably practical, the Commission consider and approve an approximately $57 million increase in the MRPC established for the ELM Project, from approximately $239 million to $295 million.

Consistent with the requirements set forth in Rule 16.4, this PFM provides calculations supporting the updated cost estimate for the ELM Project and an explanation of the factors contributing to and justifying the changed costs. Namely, the increased costs are associated with four main drivers: (1) unanticipated impacts to schedule; (2) work accelerated to avoid further impacts to schedule; (3) emergent issues; and (4) pending cost changes that remain under review and are still subject to resolution with SCE's contractor. These drivers are explained in greater detail throughout this filing and demonstrate that most, if not all, of the subject cost increases are directly or indirectly due to external factors outside of SCE's control, were not contemplated when the initial cost estimates for the ELM Project were developed and therefore were not accounted for in the Commission's original cost findings in D.20-08-032. Also detailed in the discussion below are the reasons why this PFM could not have been filed within a year of the Decision, namely that most of the increased costs did not materialize until 2022, almost two years after the Decision was issued.

The ELM Project was designed to have a construction schedule lasting slightly over one year. While SCE made every effort to keep the ELM Project on schedule, due to factors largely outside of SCE's control, such as agency approval timelines and supply chain issues, the project online date was pushed from June 2021 to December 2023, a schedule impact of two and a half

years. Costs associated with these schedule impacts, efforts to accelerate work to mitigate impacts to the project online date, and added scope, together account for approximately $26.1 million of the cost increase requested in this PFM. The remaining $30.4 million in increased costs are associated with pending costs that: a) are still subject to resolution with SCE's contractor, including costs for security services and outstanding change orders which were received later than expected; b) account for greater value than expected; and c) are still under review.[4] The specific details of cost changes by major work category and the explanation of the factors contributing to the changed estimates are discussed in detail in Section V, below.

Table 1 below presents a total ELM Project cost summary that compares the MRPC amounts identified in D.20-08-032 against the updated costs included in this PFM. The cost approved in D.20-08-032 was $239 million, including $220 million of direct costs and $19 million of contingency. Based on the updated information included in this PFM, SCE now requests the MRPC be increased to $295 million, which consists of $276 million of direct costs and $19 million of contingency. This updated cost estimate is based on current final engineering design specifications, known field conditions and specified environmental requirements. To avoid confusion due to the different basis of costs, all costs in this PFM, including those in the Project Cost Summary, are presented in 2019 constant dollars.

[4] SCE is currently evaluating the accuracy of these pending costs. Despite the ongoing uncertainty about the ultimate amount that might be paid to SCE's contractor, SCE is nevertheless including the maximum potential cost amount associated with these costs in this PFM now, in consideration of the Decision's direction that SCE seek any MRPC adjustment via the filing of a PFM before the MRPC is exceeded. While SCE believes that it ultimately may pay less than the full amount identified in this PFM, until the assessment of the validity of and responsibility for these costs is complete, SCE is treating the full amount as potential cost liabilities and as such, has included them in the total amount requested in this PFM. Two potential processes for "truing-up" the actual costs associated with these outstanding items are described in Section V.B.4, below.

Table-1:Project Cost Summary[5]

ELM Project Cost	CPUC CPCN Decision (2019$)	PFM Update[6] (2019$)	Variance (PFM-Decision)
Direct Cost	$220	$276	$57
Contingency	$19	$19[7]	$0
Total	**$239**	**$295**	**$57**

In approving SCE's Application for a CPCN for the ELM Project, the Commission acknowledged that costs associated with the Project could increase, and therefore the Commission directed SCE to file a PFM seeking approval of a revised MRPC.[8] In response to the Commission's direction, SCE submits this Petition, which includes a description of the costs that have increased since SCE's original filing and the reasons for the change and seeks an adjustment to the total project costs.[9] SCE respectfully requests this adjustment pursuant to Section 1005.5(b) and CPUC Rule 16.4 because the adjusted costs are reasonable given the scope of the project and the underlying circumstances, and because the ELM Project continues to be in the public's convenience and necessity, despite the projected increase in project costs.

III.

ELM PROJECT BACKGROUND AND PROCEDURAL INFORMATION

A. Project Purpose And Need and The Urgent Need for Timely Operational Status

In D.20-08-032, the CPUC concluded that the ELM Project would serve the public convenience and necessity by improving grid reliability and providing the transmission capacity

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5 As mentioned above, numbers may not precisely add due to rounding.

6 SCE's 2019 CPCN Application included recorded costs from 2014-2018 that had not been escalated to 2019 constant dollars prior to the filing of the CPCN Application. Had that escalation been applied, the total costs requested in the CPCN Application would have been higher. Because the recorded, and not the escalated, costs were approved in D.20-08-032, SCE now seeks, and has included in this PFM, the cost of the correct escalation applied to those recorded costs, which totals $3.5 million (2019 constant $).

7 SCE is not seeking any modification to the total contingency amount identified as part of the MRPC in D.20-08-032. However, SCE does note that to date, SCE has already used approximately $8.5 million of the total $19 million in contingency to pay for eligible expenses.

8 D.20-08-032, OP #5.

9 See Section VII for additional detail regarding costs by element.

upgrades necessary to alleviate the deliverability constraints upon renewable energy development, as necessary to meet electric providers' and the California's renewable portfolio standard (RPS) requirements as determined by the CPUC and the state's clean energy goals.[10] The need for the Project has not changed. The State's current RPS requires load serving entities to contract for 44 percent renewable procurement by 2024, 52 percent by 2027, and 60 percent by 2030.[11] SB 100 also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of electric retail sales by 2045.[12] To reach these higher goals, additional renewables will need to come online, and the increased project costs are reasonable considering these goals and the events that have transpired since the CPCN was issued.

1. The ELM Project is Needed to Facilitate Renewable Development Necessary to Meet State RPS Goals

The CAISO identified the ELM Project as a transmission upgrade needed to relieve an existing transmission capacity constraint that restricts the deliverability of new renewable generation resources to deliver power from several Competitive Renewable Energy Zones (CREZs).[13] As the Commission concluded in the Decision, the ELM Project includes upgrades to existing series capacitors (SCs) and terminal equipment that will increase the import capability of SCE's existing transmission lines to allow the CAISO to issue Full Capacity Deliverability Status (FCDS) to more renewable energy generators.[14] In addition, the improved resource adequacy made possible by the ELM Project will ensure the safe and reliable operation of the

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[10] D.20-08-032, at p. 20; Findings of Fact (FOF) 1-7.

[11] Cal. Pub. Util. Code § 399.15(b)(2)(B).

[12] Cal. Pub. Util. Code § 454.53.

[13] For a project to be considered a renewable energy resource and therefore eligible to contribute toward the State's renewable energy portfolio goals, the generation must have the ability to achieve Full Capacity Deliverability Status (FCDS). Additionally, a project can typically only contribute towards resource adequacy (RA) if it has FCDS. A project must have RA to participate in the CAISO market as a reliable and dependable resource. *See generally*, Exhibit SCE-1, at 15:12-20:16.

[14] D.20-08-032, FOF 1-7.

grid while also assisting the state in reaching its RPS goals and will do so without requiring significant changes in the existing footprint of SCE's transmission lines.[15] Without ELM, existing transmission capacity constraints will continue to limit future energy development needed to facilitate higher levels of renewable resources.

There is broad recognition that the ELM Project is needed to meet the state's renewable energy goals. The Natural Resource Defense Counsel (NRDC) intervened as a party in the CPUC proceeding and commented in support of the ELM Project for maximizing existing transmission corridors to increase the import of renewable generation, with minimal environmental impacts. In addition, renewable energy generators, including NextEra and First Solar, became parties to the CPUC proceeding and actively participated by providing testimony and witnesses in support of the ELM Project, explaining that the project is needed for them to be able to deliver clean renewable energy to the California electric grid.[16]

2. The ELM Project Must Be Promptly In-Serviced To Provide Deliverability To Renewable Generation And Increase Reliability

As discussed further below in Section V, the ELM Project was originally targeted for operation by now, although a variety of events and issues have delayed the completion of the project. Any further delay to the online date for the ELM Project could further impact the amount of energy available to the grid.[17] The ELM Project will provide deliverability to a significant amount of new resources – including solar, storage, and hybrid resources – that will be able to count toward meeting system resource adequacy requirements and will also help to address California's energy supply shortage.[18] These generation resources play a critical role in helping the CAISO meet the system's needs. As discussed further in Section V, below, SCE has

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[15] *Id.*

[16] *See* D.20-08-032, at pp. 6, 20.

[17] *See* D.20-08-032, at pp. 39-41 (CPUC discussing that the need for transmission upgrades, such as ELM, has likely increased since the time the ELM Application was filed).

[18] *See, e.g.*, Aug. 31, 2022, Proclamation of a State of Emergency, available at: https://www.gov.ca.gov/wp-content/uploads/2022/08/8.31.22-Heat-Proclamation.pdf?emrc=78e3fc.

taken several actions to accelerate the construction schedule in order to be able to accommodate these renewable generators as soon as practicable, even though some of those tasks resulted in increased costs.

B. Procedural History, Culminating in a CPCN with the MRPC

The ELM Project was approved by the CAISO in 2014 through the CAISO's 2012-2013 and 2013-2014 annual transmission planning process as a policy-driven transmission project needed to integrate renewable resources to meet California's RPS requirements and clean energy goals. SCE began planning for the implementation of the ELM Project in 2016 and, recognizing the need to advance the ELM Project as quickly as possible, brought on Beta-Siemens as an engineer/procure/construct (EPC) contractor in 2017, with the expectation that construction of the ELM Project would begin in Q1 2019.[19]

SCE filed an Application for a Permit to Construct (PTC) the ELM Project on May 2, 2018. On June 1, 2018, the California Public Advocates Office (Cal Advocates) submitted a protest that argued that SCE should have applied for a CPCN, rather than PTC. On January 9, 2019, after receiving briefing on the issue, the CPUC ordered SCE to re-file the ELM Project as a CPCN Application if it wished to proceed with the ELM Project.[20] Pursuant to that direction, on April 19, 2019, SCE filed an Amended Application for the ELM Project seeking a CPCN. The CPCN Application included updated project costs based on a March 2020 – June 2021 assumed construction period. After completion of CEQA environmental review, evidentiary proceedings and briefing, the matter was submitted for consideration on January 31, 2020.

On September 3, 2020, the Commission issued D.20-08-032 granting the CPCN for the ELM Project, establishing a total MRPC of $239 million, including direct costs of $220 million and a contingency of $19 million. The CPUC found that the costs for the project were reasonable

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[19] Although referred to in this PFM as "Beta-Seimens" for efficiency, that entity is actually a joint venture between Beta Engineering California LP and Siemens Industry, Inc.

[20] Assigned Commissioner's Ruling Ordering Applicant to File Amended Application and Directing Caption Modification (January 9, 2016), available at: https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M254/K771/254771771.PDF.

given that the project was needed to ensure the development of RPS-eligible resources[21] and that the construction of the ELM Project would give Southern California ratepayers access to additional renewable energy sources while reducing congestion on existing transmission lines.[22]

Once the CPCN was issued, SCE commenced the execution phase of the ELM Project. However, the execution phase of the Project was impacted by a number of unforeseen events, described more fully in Section V below, that pushed back the construction timeline, ultimately delaying the project online date and driving increased project costs. Through the end of April 2023 SCE has spent $227 million on the ELM Project, approximately $218.5 million of which are direct costs and approximately $8.5 million of which are from contingency. As a result, SCE is filing this PFM now pursuant to OP #5.

IV.

LEGAL STANDARDS APPLICABLE TO THIS PFM

The Commission takes several factors into consideration when setting the maximum reasonable cost, including the design of the project, the expected duration of construction, an estimate of the effects of economic inflation, the level and complexity of necessary environmental mitigation, and any known engineering difficulties.[23] California Public Utilities (Pub. Util.) Code Section 1708 grants the Commission authority to "rescind, alter, or amend any order or decision made by it. Any order rescinding, altering, or amending a prior order or decision shall, when served upon the parties, have the same effect as an original order or decision." Relevant to the MRPC established in a CPCN, Pub. Util. Code Section 1005.5 further specifies that the utility "may apply to the commission for an increase in the maximum cost" and that the Commission "may authorize an increase in the specified maximum cost if it finds that the cost has in fact increased and that the present or future public convenience and necessity

[21] D.20-08-032, COL #12.

[22] D.20-08-032, FOF #6.

[23] D.08-12-058, at 274.

require the construction of the project at the increased cost."[24] The petitioning party bears the burden of justifying its requested modification.[25]

In D.20-08-032, the Commission further specified that the vehicle for seeking an increase in the MRPC is a Petition for Modification. The Decision states:

> "Pursuant to Pub. Util. Code Section 1005.5(b), at any point during the [ELM] Project, but prior to any expenditures in excess of the cost cap, SCE must file a formal Petition for Modification with the Commission for consideration of a revised determination of the reasonable and prudent maximum cost of the Project."[26]

The Decision also states that when evaluating a PFM, the CPUC will consider whether the increase in costs "hinged upon factors outside of SCE's control" and noted that the increased cost should not be approved "if the alleged increases are the result of a failure of SCE to provide the Commission with reasonably accurate estimates in this proceeding."[27]

The petition for modification process is further governed by Rule 16.4 of the Commission's Rules of Practice and Procedure, which contains both procedural and substantive requirements. Rule 16.4 requires that a PFM must "concisely state the justification for the requested relief and must propose specific wording to carry out all requested modifications to the decision."[28] New or changed facts must be supported by a declaration or affidavit.[29] Rule 16.4(d) also states that if more than one year has elapsed since the decision approving a CPCN, the petition "must also explain why the petition could not have been presented within one year of the effective date of the decision."[30]

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[24] Cal. Pub. Util. Code § 1005.5(b).

[25] *See* D.08-09-024 at 3.

[26] D.20-08-032, OP # 5.

[27] D.20-08-032, at 37.

[28] Rule 16.4(b).

[29] *Id*.

[30] Rule 16.4(d).

SCE notes that while the CPUC has jurisdiction pursuant to Pub. Util. Code Section 1005.5(a), to specify a MRPC for the ELM Project, the Federal Energy Regulatory Commission (FERC) ultimately will decide how much of the costs for this project SCE may recoup in transmission rates.[31] As such, this PFM does not request cost recovery or a prudency determination from the Commission, but consistent with the Commission's directive ordering SCE to make this filing, this PFM seeks to adjust the Commission's MRPC pursuant to Section 1005.5 to the updated cost estimates described herein.

V.

GOOD CAUSE SUPPORTS SCE'S REQUEST FOR AN INCREASE IN THE MRPC

A. SCE Had Little, If Any, Control Over Most Of The Drivers Of Increased Costs

In D.20-08-032, the CPUC stated that if a PFM were ever submitted, the CPUC would evaluate both: 1) whether the increased costs included in the PFM were due to factors outside of SCE's control; and 2) whether SCE failed to provide reasonably accurate cost estimates during the proceeding.[32] As described here and in further detail in Section B, below, SCE's estimates provided at the time of filing were reasonable. The cost estimates in SCE's ELM CPCN Application were based on a March 2020 construction start date; however, despite SCE and its contractor's readiness to commence construction as soon as possible, construction activities did not start in earnest until early 2021. The ELM Project was beset by multiple unforeseen impacts to schedule outside of SCE's control that, when coupled with CAISO outage constraints,[33]

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[31] As approved in D.20-08-032, the cost allocation of the ELM Project was 93% FERC jurisdictional and 7% CPUC jurisdictional. If the PFM is approved, the cost allocation would be 94% FERC jurisdictional and 6% CPUC jurisdictional.

[32] D.20-08-032, at 37.

[33] To safely perform construction activities, work must occur during a planned outage. CAISO prohibits any outages during the summer period (typically between July 1 – September 30, and potentially further depending on extreme heat and weather conditions), so outages may only be scheduled during the eight-month outage window (October 1 – June 30). Additionally, outages may only be taken on one of the three ELM Project 500kV transmission lines at any given time. Therefore, construction was sequenced so that all major work would be completed on one line before work could begin on the next line, while maintaining the required compensation for the transmission lines.

significantly extended the Project's construction timeline and corresponding costs, ultimately resulting in the need for this PFM. The extended construction timeline impacted project cost, both because: (a) it changed the assumptions upon which SCE's cost estimates were based: and (b) the project took longer to complete. The following discussion describes the factors that resulted in the increased cost of the project.

1. Unforeseen Schedule Impacts Associated With Agency Approvals And Authorizations

a) CPUC Approvals

The ELM Project licensing process took longer than SCE estimated, delaying commencement of construction, and impacting the project's construction timeline, resulting in increased project cost. For example, when SCE originally filed for approval of the ELM Project via a PTC in May 2018, SCE anticipated that construction would begin in Q2 2019. With this expectation, and in recognition of the urgent need to bring the Project online as soon as possible to meet generator timelines, SCE ordered the major equipment necessary to construct the ELM Project (*i.e.*, capacitor banks) from Siemens while SCE was preparing the PTC Application. SCE's intention was to ensure that SCE would have all the equipment necessary to begin project work as soon as SCE received CPUC approval. However, after the CPUC directed SCE to refile the Application as a CPCN, SCE revisited its schedule based on an expected March 2020 CPCN.

The anticipated March 2020 CPCN approval date included in SCE's CPCN Application was based on SCE's experience in licensing prior projects and the prescribed timelines in CEQA. Based on that experience and the CEQA guidelines, which provide that a lead agency should take no more than 180 days, or six months, to adopt a Mitigated Negative Declaration (MND) and approve a project following an application being deemed complete, SCE anticipated receiving a CPCN for the ELM Project in March 2020 (*i.e.*, 11 months after filing its application)

and planned to begin construction that same month.[34] While SCE updated its costs in its amended CPCN Application to capture monies spent between the original date of construction and the revised expected date of construction identified in the CPCN Application, that expected start date did not materialize either. Rather, the CPCN was not issued until September 2020, with the result that construction start was delayed even further. As a result, the material SCE had ordered could not be used right away, and SCE incurred additional costs to store and insure some equipment at Siemens' warehouses in Germany until construction commenced.[35]

The timing of the Decision fell outside of any CAISO-approved outage period, meaning that the earliest that SCE could begin construction on certain portions of the ELM Project (such as optical groundwire – OPGW – work) was October 2020, when the outage constraint was lifted.[36] Even with the opening of outage window on October 2020, work on the ELM Project did not begin in earnest until December 2020, after SCE completed its pre-construction preparatory activities (including field surveys) and subsequently receive a Notice to Proceed (NTP) from the CPUC.[37]

b) Federal Agency Approvals

A large percentage of the ELM Project is located on federal public lands within rights-of-way administered by the Bureau of Land Management (BLM) offices in California and Nevada,[38] the National Parks Service (NPS) for work in the Mohave National Preserve (MNP), and the Bureau of Reclamation (BOR). Substantial delays in permitting from these federal

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[34] CEQA establishes that a lead agency must adopt a MND within 180 days of the application being deemed complete and must approve a project within 60 days of adopting the MND (Cal. Pub. Res. Code § 21151.5; 14 Cal. Code Regs. § 15107).

[35] In an effort to reduce the cost of storage, SCE stored other materials and equipment at SCE's Eldorado Substation.

[36] See footnote 35 for an explanation of the CAISO outage constraint.

[37] SCE was able to begin a small amount of project work in Nevada in November 2020 under a pre-existing operations & maintenance work arrangement SCE had with the BLM's Nevada office,

[38] SCE did begin construction activities within the existing Mohave Substation by installing circuit breakers, disconnect switches, bus supports, relays, etc. prior to receiving NTPs for work outside of existing substations.

agencies further affected critical construction activities, resulting in additional delay and cost to the project.

For example, SCE anticipated that approval for construction of the ELM Project on federal land would be received by September 2020. However, by early 2021 SCE still had not received necessary approvals, including right-of-way (ROW) grant authorizations and NTPs from the BLM offices in California and Nevada, a ROW Permit and a Special Use Permit (SUP) from the NPS, or a Right-of-Use Authorization from the BOR. As a result, construction activities on federally-managed lands were unavoidably delayed, resulting in significant and cascading schedule delays. These delays led to corresponding increases in project costs resulting from "burn rate" expenses incurred while SCE and SCE's retained contractors were unable to begin construction while awaiting the necessary approvals, as well as general loss of productivity.

Yet, burn rates were not the only costs that increased as a result of delays in obtaining federal agency approvals. The cost of construction services themselves also increased. For example, as a result of the delay in receiving the NTP from the BLM NV, SCE modified the method of construction for OPGW work located on BLM land in Nevada, resulting in additional cost. The sequencing of the ELM Project had called for the OPGW work on the Eldorado-Mohave line located on land managed by BLM NV to be completed first, and under SCE's November 2020 construction schedule (which had been revised to account for the new construction start date as a result of the September approval of the CPCN), SCE expected to receive a NTP from the BLM in Q1 2021. However, early in Q1 2021, while SCE awaited issuance of the NTPs from the BLM (CA and NV), the NPS, and the BOR, the Department of Interior (DOI) issued Secretarial Order 3395, which instituted a temporary hold on the authority of DOI agencies to approve projects, and issue and renew Right of Way Grants, potentially delaying any federal approval of the ELM Project by as much as one year.

In light of this new regulatory hurdle, SCE assessed whether there was any way to complete this scope of work without the NTP to avoid additional impacts to the construction

schedule. SCE determined that it could mitigate the potential schedule impact associated with the delayed NTP if it were to complete the OPGW work on the BLM NV land under SCE's existing O&M agreement with the agency. However, to complete the OPGW work under the existing agreement, SCE's contractor had to re-design the work so that it could be completed without the use of helicopters, which were not authorized under the terms of the O&M agreement. The change in construction method meant that SCE avoided a major delay to the project's schedule, but at an increased cost because the contractor had to hire additional staff and equipment to complete the work without the use of helicopters.[39] The BLM NV ultimately issued its NTP on April 12, 2021.[40] Thereafter, SCE also incorporated helicopters into the construction effort) and was able to complete the OPGW work on the Eldorado-Mohave line on April 26, 2021.[41] SCE believed that it was reasonable to incur the additional construction costs in this instance because had SCE waited until the BLM NV issued the NTP needed to complete the work as originally designed, SCE likely would have incurred even greater "burn rate" costs stemming from the schedule delay.

As detailed further in Section V.B below, other cascading cost increases (*i.e.*, additional costs incurred by SCE as it accelerated and/or restructured the construction process to make up for lost time and still meet targeted deliverability dates) added to overall ELM Project costs. For example, ELM Project construction sequencing called for OPGW work on the Lugo-Mohave line to begin as soon as the OPGW work on the Eldorado-Mohave line was complete. While

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[39] Details related to cost increases associated with this issue are set forth in Section V.B.1, below.

[40] Construction delays on federal lands actually could have been longer. Despite the issuance of Secretarial Order 3395, SCE was able to work with the BLM CA and BLM NV offices to get the temporary hold lifted, and as a result the BLM CA issued the NTP for the California portion of the ELM Project on February 26, 2021 and the BLM NV issued its NTP on April 12, 2021. Had SCE not taken proactive measures to mitigate this delay by working with BLM on the DOI hold, delays of work could have lasted several additional months.

[41] SCE was able to complete this work by April 26, 2021 despite the fact that during the construction activities undertaken pursuant to the O&M Agreement, a serious safety incident occurred in the field necessitating emergency action by the project fire marshal at the site. (*See* Section V.B.3., below for further details about the fire marshal.) That incident also prompted an approximately three-week delay in completing the OPGW work in this area, but the effort was still completed by April 26, 2021.

OPGW work on the Lugo-Mohave line did follow that plan, some of the Lugo-Mohave line crosses the MNP, where work could not begin until SCE received approval of an SUP authorizing work in the MNP. At the time of the CPUC Decision, SCE anticipated getting a SUP from the NPS in September 2020. However, NPS did not issue the SUP until almost 10 months later, on June 22, 2021. Compounding that delay was the fact that the approval was received at the beginning of a CAISO outage constraint window, meaning that the construction schedule would be even further impacted and the resulting delay jeopardized SCE's ability to meet the targeted online date for the ELM Project. Therefore, in an effort to keep the project on schedule, SCE accelerated the OPGW work in the MNP by hiring additional staff (including additional construction crews and environmental monitors) and approving a more aggressive construction schedule involving more days and longer hours, all at additional cost (see Section V.B.2 below).

Similarly, even after the September 2021 SUP was granted and SCE's contractor mobilized to begin OPGW work in the MNP, additional potential delays further caused SCE to alter its construction plan (and thereby incur additional costs) in order to meet deliverability dates. As conceived by SCE, the OPGW work was to involve helicopters. However, just before OPGW work began, the NPS requested that SCE submit a Helicopter Use Plan (HUP) for review and approval. SCE prepared the plan (but disagreed with the MNP that the HUP needed to be approved before OPGW work could begin in the MNP, as a HUP was not required by the environmental documents or the SUP and any additional delay would result in a major impact to the OPGW work and associated construction schedule). Therefore, SCE and its contractor agreed to a re-sequencing of work in an effort to keep the project moving forward, and began work outside of the MNP on October 1, 2021. This led to additional costs associated with the re-sequenced work (see Section V.B.2 below).

2. Unforeseen Schedule Impacts Associated With Material and Supply Chain Issues

Separate from agency-related impacts to the schedule, interruptions in the availability of materials and components necessary for ELM Project construction also prolonged the project construction schedule and impacted overall costs.

For example, in April 2021, SCE became aware of the potential for a 90-day delay in the delivery of three Mechanical Electrical Equipment Rooms (MEERs) associated with the ELM Project. Unusually severe winter weather in Texas and other areas of the southeast impacted the ability of the MEER supplier to get insulating foam, a critical element of the MEER buildings. Then, in September 2021, the MEER supplier communicated that there would be an additional delay to the MEER delivery date as access to the insulating foam was further impacted by a Hurricane Ida.[42] Ultimately, due to these material and supply chain issues, each of the three MEER buildings was delivered at least six months after their respective expected delivery dates.

The delayed delivery of each of the MEER buildings caused cascading scheduling impacts because those delays correspondingly prevented other tasks that relied on MEER building installation from being completed. For example, the schedule prepared at the outset of construction called for the Lugo-Mohave Transmission Line and Ludlow and Mohave series capacitors to be ready for service by December 2021. However, the MEER delays, when coupled with the construction period restrictions created by the CAISO outage constraints, pushed that completion date to May 2022. Because SCE had to sequence work such that work on the Eldorado-Lugo line could only be done once the Lugo-Mohave line work was complete (*i.e.*, CAISO requires at least one line to remain in service to provide transmission capability even during construction), SCE therefore could not begin construction on the Eldorado-Lugo

[42] In an attempt to mitigate this delay, Beta-Siemens submitted an Energy Priorities and Allocations System (EPAS) Application to the Department of Energy in November 2021 to request assistance in obtaining the materials necessary to complete the MEER building. SCE also escalated the MEER delay issue with KPS, the MEER vendor, and after further evaluation, KPS was able to deliver the three MEERs on November 26, 2021, December 29, 2021, and March 5, 2022, obviating the need for pursing the EPAS application further.

transmission lines and associated series capacitor work until after the Lugo-Mohave work was done. That left only June 2022 as the only available month for Eldorado-Lugo line work prior to the summer CAISO outage constraint, and therefore work did not begin in earnest on the Eldorado-Lugo lines until October 2022. As a result, the Project's completion date was rescheduled from June 2022 to June 2023 – an entire year of delay. The delay in the online date contributed in a corresponding increase in project costs associated with project management and support.

Additionally, in Q2 2022, SCE was made aware of supply chain issues causing circuit breaker installation delays, as well as delayed delivery of HVAC units for two of the series capacitors. These delays affected the June 2022 energization target date for the first series capacitor (SC5 or Ludlow). The June 2023 overall project online date was dependent upon the energization of SC5 in June 2022. As a result of the delayed energization of SC5, SCE again re-sequenced the construction work, and the project online date was pushed even farther out—from June 2023 to December 2023. As explained in Section V.B.1 below, each of these sequential delays increased overall costs.[43]

B. The Increased Project Costs Requested In This PFM Are Reasonable And Resulted From Schedule Delays And SCE's Attempts To Mitigate Them, Emerging Issues That Arose During Execution And/Or Contractor Change Orders That Have Been Or Will Be Thoroughly Vetted.

Pub. Util. Code § 1005.5(b) specifically allows a utility applicant to seek additional cost recovery beyond that originally set forth in a CPCN Application if the Project costs have increased and the CPUC finds those increased costs reasonable. Due to the factors and

[43] As these delays unfolded, SCE and its contractor repeatedly sought alternative ways to mitigate further impacts to the project schedule. SCE checked major equipment inventories and evaluated the possibility of borrowing equipment that matched the specifications needed for the site until permanent equipment arrived. Beta-Siemens also developed a temporary configuration for the circuit breaker installation to allow construction to proceed with testing until the correct circuit breakers arrived.

circumstances outlined above, project costs have increased across almost every facet of the ELM Project construction effort for legitimate reasons.

In the following subsections, SCE describes cost increases by category, explains what activities are included in each category, and identifies the major sources of the cost differences.[44] For ease of reference, each subsection contains a table that provides a numerical comparison of the increased costs included in this PFM against the corresponding costs set forth in the MRPC in D.20-08-032. Each subsection also includes a description of the events and other factors that have contributed to the respective increases. All costs in the tables below are presented in constant 2019 dollars and, where appropriate, include any remaining costs through Project completion.

1. Schedule Impacts and Additional Support (+$7.8M)

The costs included in this subsection are associated with additional costs and/or additional support resulting from delays to and changes in the proposed schedule. As described in Section V.A.1 above, the ELM Project CPCN cost estimate was based on both SCE's experience licensing similar projects and the construction schedule and cost estimates provided by Beta-Siemens. SCE anticipated that it would take approximately one year to license the project and Beta-Siemens anticipated that the project would take slightly over one year to construct it. The costs included in the CPCN were based on these schedules, and therefore did not account for the impacts to project schedule resulting from longer than expected timelines for regulatory and agency approvals from licensing through execution. The impacts to schedule resulted in a loss in construction productivity that ultimately increased project costs. The costs included within the Schedule Impacts and Additional Support category relate to the following

[44] Namely, the information in Subsection V.B.1. (and its sub-subsections) details the $7.8 million increase related to schedule impacts and additional support costs; the information in Subsection V.B.2. details the $13.8 million increase related to OPGW work acceleration costs; the information in Subsection V.B.3 details the $4.5 million increase related to emergent issues; and the information in Subsection V.B.4. details the potential $30.4 million increase related to security services and pending change order costs which are still under review. Combined, these increases collectively account for the approximately $57 million overall increase requested in this PFM.

subcategories: regulatory and agency approvals and associated construction delays, project management and support, and construction management services.

Table SIAS-1 presents a comparison of the support costs included in the MRPC approved in the Decision against the updated cost estimates included in this PFM as revised due to schedule delays.

Table SIAS-1:Schedule Impact and Support Costs
(Constant 2019 $millions)

a) CPUC Decision	$	10.5
b) SCE PFM	$	18.3
c) Variance (b-a)	$	7.8

As shown in Table SIAS-1, increased costs in this general category total approximately $7.8 million. For further transparency, additional descriptions of the specific issues resulting in schedule impacts and the additional support costs arising therefrom are set forth in the following subsections V.B.1(a) through V.B.1(c), which also provide details regarding the sub-categories that comprise this overall group of cost increases.

a) <u>Regulatory and Agency Approvals and Associated Impacts to Construction (+$3.6M)</u>

The first sub-category in this section addresses costs of individual items specifically affected by longer than estimated timelines for securing necessary agency approvals that resulted in a prolonged construction schedule. Table SIAS-1a presents a comparison of the anticipated costs for these activities as included in the MRPC approved in the Decision with the increased cost of those activities included in this PFM as a result of the longer timelines for receiving regulatory and agency approvals and associated construction delays.

Table SIAS-1a: Regulatory and agency approvals and associated impacts to construction
(Constant 2019 $millions)[45]

a) CPUC Decision	$	-
b) SCE PFM	$	3.6
c) Variance (b-a)	$	3.6

Summary of Cost Change Drivers

The additional costs included in this category primarily result from several significant and unanticipated deviations from the anticipated date of regulatory and agency approvals for certain items that extended the duration of Project. The additional costs in this category are a direct result of this extended timeline and account for lost productivity, and additional labor, equipment, and/or materials to account the changes in schedule. For example, the contractor's cost for completing the OPGW work in Nevada increased as a result of lost productivity while the construction work was re-designed while awaiting a delayed NTP from the BLM Nevada office. Additionally, the contractor had to hire additional workers, obtain different equipment, and work additional days as it attempted to adhere to the original construction schedule. All these modifications resulted in additional costs.

The specific items that combined together comprise the $3.6 million increase in this category are described below:

- BLM Nevada NTP Delay ($1.4M)
  The BLM Nevada NTP was significantly delayed. As described above, to mitigate the impact to the schedule, Beta-Siemens completed the majority the OPGW work in Nevada without a helicopter. This change resulted in an increase in labor and construction cost associated with the additional labor and equipment needed to complete the work without helicopters.

- Lugo-Mohave Outage Cancellation Delay ($0.4M)
  CAISO cancelled an outage on the Lugo-Mohave Transmission line on June 15-17, 2021 due to high temperatures, which postponed OPGW work on the Lugo-Mohave

[45] For ease of presentation, Table SIAS-1a lists no CPCN costs for this collection of factors because the schedule delays contributed to costs affecting a wide range of project and management components across many issues. Therefore, the delay impacts are collectively compared against an assumed impact of zero dollars to represent completion of the project at the original estimation. However, the specific categories affected by these delays are more fully described in the bullet points below.

line by three days. This delay resulted in a commensurate increase in construction cost and project overhead.

- Letter of Credit and Parent Guarantee Associated with Delay ($0.4M)
  SCE's contract with Beta-Siemens was established with a Parent Guarantee based on the total contract value and a Letter of Credit for 10% of the total contract value. Project delays resulted in an increase in the total contract value, and as a result the duration and value of the bond and guarantee covered under the Letter of Credit and Parent Guarantee also increased.

- Ampjack Tower Raise Delay ($0.4M)
  The Ampjack Tower Raise scope of work was originally planned for 2019, but due to federal and state agency approval delays could not be completed until 2022. This delay resulted in increased material and labor costs and re-mobilization costs due to outage windows allowed by CAISO.

- American Power Lugo-Mohave Transmission Line Delay ($0.3M)
  Deep sand deposits discovered along an access road impacted the ability of contractor vehicles and equipment to complete work for 1.5 days. This delay resulted in increased costs associated with lost productivity for a 20-man wire crew and the cost to rent and operate a bulldozer to clear out the sand.

- Equipment Storage & Insurance Costs Associated with Delay ($0.3M)
  SCE ordered major equipment necessary to construct the ELM Project (including capacitor banks) from Siemens while SCE was preparing the PTC Application. The delay from converting to a CPCN application and the resulting CPCN proceeding and delayed construction start date resulted in increased storage and insurance costs for storing Project equipment at Siemens's warehouses in Germany.

- Burn Rate Associated with Project Delay from 8/1/2020 to 10/1/2020 ($0.2M)
  Beta-Siemens was prepared to begin work on the project on August 1, 2020, but incurred additional project management costs for the nine-week project delay between August 1, 2020 to October 1, 2020 while awaiting commencement of construction.

- Costs Associated with Delayed approval of HUP by MNP ($0.1M)
  SCE's contractor (Barnard) mobilized to begin OPGW work in the MNP in September 2021. While the BLM had approved the HUP in January 2021, the MNP also requested that SCE submit the HUP for its review and approval before work was allowed to begin in the MNP after SCE's contractor had mobilized. SCE has met and complied with all the requirements of the BLM's environmental review documents and conditions, and neither those documents nor the MNP SUP identified review and approval of a HUP as a requirement. Ultimately, MNP did not give permission to use helicopters until October 6, 2021 and Barnard started OPGW work in the MNP on

October 8, 2021. The delay resulted in additional cost of re-sequencing the work and avoidance of the MNP between October 1, 2021 and October 7, 2021.[46]

- BLM CA Delay at Newberry Springs Series Capacitor Site ($0.1M)
  The BLM CA issued a stop-work notice on April 26, 2021 at the Newberry Springs SC2 site for four days to assess the potential presence of Special Status Plant. Although a site visit ultimately confirmed no impact to such a resource, the delay resulted in costs for labor and equipment rental fees during the four-day work stoppage.

b) Project Management, Support, and Engineering (+$2.4M)

The second sub-category affected by schedule impacts consists of Project Management, Support, And Engineering costs. These costs are primarily comprised of labor expense, and include costs for SCE and SCE's contract resources to plan, design, govern, coordinate, manage and control the project, including project and contract management and agency interaction. Because these costs are incurred throughout both licensing and execution, these costs are directly impacted by the project's schedule. As described above, as the anticipated date for ELM Project completion has been pushed back (by nearly two and a half years), project management, support, and engineering costs increased.

Table SIAS-1b presents a comparison of the project management, engineering, and support costs included in the MRPC approved in the Decision against the updated cost estimates included in this PFM.

Table SIAS-1b: Project Management, Support, and Engineering
(Constant 2019 $millions)

a) CPUC Decision	$	8.8
b) SCE PFM	$	11.2
c) Variance (b-a)	$	2.4

Summary of Cost Change Drivers

SCE's project management, engineering, environmental, and support staff provide management and oversight of the project and execution support through the implementation of the project. The project management team coordinates the siting process, preliminary

[46] Section V.B.2 below explains why Barnard performed this work instead of Beta-Siemens.

engineering scope development, environmental document development, regulatory filings, team meetings, management reporting and other licensing and execution related activities. It also provides ongoing support through reporting, data management, compliance with permitting requirements, contract implementation, and coordination and oversight of Beta-Siemens and other contractors supporting the project.

Notably, the project manager has overall responsibility from project initiation to successful completion of the project. Additional support resources include project analysts, schedulers, cost engineers, construction advisors, consultants and other personnel. This category also includes, but is not limited to, the work performed by several other SCE departments including Environmental, Transmission and Substation Construction, Quality Assurance, Corporate Real Estate, Transmission Planning, Resource Planning, Grid Contracts, Regulatory Affairs, Public Affairs, Corporate Communications, Electric and Magnetic Field (EMF), and Supply Chain Support. The project engineer oversees the design and engineering efforts for all disciplines, including but not limited to civil engineering, electrical transmission and substation, telecommunication, distribution, geotechnical and apparatus personnel, and the engineer serves as the single point of contact between SCE and Beta-Siemens technical team. The project engineer is also responsible for providing construction support by initiating and responding to requests for information (RFIs).

As shown in Table SIAS-1b, the original estimate for project management, engineering and support costs was $8.8 million; and SCE's current remaining estimate (after accounting for the application of amounts designated for "known risks"[47]) for this category is $11.2 million. The resulting $2.4 million increase in project management, support and engineering cost is a direct result of delays to the project online date described in Section V.A, above. SCE's estimates for project management, support and engineering costs included in the CPCN Application were based on a June 2021 project completion date, and those estimates have

[47] Net cost underrun from other project elements and known risks that have materialized and/or were retired were allocated to cover additional cost in this sub-category.

increased as a direct result of the updated completion date of December 2023. The burn rate was forecasted using historical project data and reflects level-of-effort data for the specified time periods of the project lifecycle.

c) Construction Management Services (+$1.7M)

The third sub-category affected by the aforementioned schedule impacts consists of Construction Management Services costs. These costs are primarily comprised of labor expense and include costs for SCE and contract resources to provide construction site representatives at each of the substations and midline series capacitor locations. Because these costs represent the cost of providing construction management services throughout the life of the project, the level of effort associated with construction management services is directly impacted by the project's schedule.

Table SIAS-1c presents a comparison of the construction management services costs included in the MRPC approved in the Decision against the updated cost estimates included in this PFM.

Table SIAS-1c: Construction Management Services
(Constant 2019 $millions)

a) CPUC Decision	$	1.7
b) SCE PFM	$	3.5
c) Variance (b-a)	$	1.7

Summary of Cost Change Drivers

Construction management services costs include but are not limited to the cost of the construction site representatives and electrical contract checkers. The construction site representative is the point of contact between the onsite construction manager, construction team, and SCE Project Manager. This individual manages SCE safety and environmental issues onsite, facilitates daily tailboards, and prepares contractor dailies and weekly project reports to assess contractor progress and safety. He/she is also responsible for ensuring that all confidential North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP)

information is protected and all SCE-owned assets being installed and/or removed are properly documented.[48]

Construction management services costs also include the cost of an electrical contract checker. The electrical contract checker reports to the construction site representative daily and implements all working knowledge of SCE logging and clearance procedures, substation grounding manuals, safe work distances, obtaining and releasing clearances, checking, and approving the installation of personnel grounds. The electrical contract checker is responsible for the safety of all contractor personnel working in or near energized rack structures or near energized transmission lines.

Work on the substations and midline series capacitors was originally designed to be completed sequentially. However, to mitigate the impact of agency-related schedule delays and in furtherance of meeting the deliverability schedule to accommodate renewable generators reliant on the ELM Project, work on these components was instead conducted in parallel (*i.e.*, simultaneously). Because a site representative and electrical contract checker must be present at each worksite while construction occurs, the shift to a parallel work schedule meant more site representatives and electrical contract checkers were needed, resulting in increased cost.

As shown in Table SIAS-1c, the original estimate for construction management services was $1.7 million; and SCE's current remaining estimate (after accounting for the application of amounts designated for "known risks")[49] for this category is $3.5 million. The resulting approximately $1.7 million increase in construction management costs is a direct result of delays to the project online date described in Section V.A, above. SCE's estimates for construction management services costs included in the CPCN application were based on a June 2021 project

[48] NERC-CIP standards govern information related to critical electrical infrastructure to ensure the security of the North American bulk electric system.

[49] Net cost underrun from other project elements and known risks that have materialized and/or were retired were allocated to cover additional cost in this sub-category.

completion date and have increased as a direct result of the updated December 2023 project completion date.[50]

2. OPGW Acceleration (+$13.8M)

While many of the costs identified in the preceding subsection V.B.1. relate to general overhead expenses, the additional costs associated with project delays and SCE's attempts to mitigate those delays were not limited solely to overhead costs. To make up for lost schedule time, SCE also proactively engaged additional (and discrete) contractor support to accelerate some work, particularly OPGW installation work. This acceleration correspondingly increased project costs, and accounts for a substantial portion of the increase reflected in this PFM.

Table OPGW-1 presents a comparison of the costs for OPGW installation work included in the MRPC approved in the Decision against the updated cost estimates included in this PFM.

Table OPGW-1: OPGW Acceleration
(Constant 2019 $millions)

a) CPUC Decision	$	8.6
b) SCE PFM	$	22.4
c) Variance (b-a)	$	13.8

Summary of Cost Change Drivers

As described in Section V.A.1, above, the timing of approvals from the CPUC and relevant federal agencies delayed the scheduled construction start date for the ELM Project. One of the impacts of these delayed approvals was a significant delay in the first phase of the OPGW work scheduled for the ELM Project. OPGW work on the Eldorado-Mohave transmission line was scheduled to begin in March 2020 and SCE expected it would take 76 days to complete, but due to the BLM NV NTP delay and the resulting change in method of construction, work did not begin until December 2020 and took 120 days to complete. The longer construction duration resulted in a correspondingly delayed start date for the OPGW work on the Lugo-Mohave

[50] Cost increases associated with this sub-category were calculated in the same manner as described in Section V.B.1.b) related to project management, engineering, environmental, and support staff.

transmission line. This delay had a domino effect, because work on the Ludlow series capacitor (SC5), which had to come online by December 2021 to mitigate further delays, was dependent on the completion of the OPGW work on the Lugo-Mohave line. If the OPGW work on the Lugo-Mohave line could not be completed before December 2021, SC5 would not come online as scheduled, which would have resulted in additional cascading schedule delays for the rest of the ELM Project work.

To mitigate that threat to the project online date, SCE accelerated the construction schedule for the OPGW work on the Lugo-Mohave transmission line. However, accelerating the OPGW work by completing the same amount of work in a shorter time period resulted in increased costs for the resources needed to support the work, namely the cost to onboard additional crews, labor and overtime for additional hours worked and additional equipment needed to complete the work on schedule. In fact, as Beta-Siemens began to construct the Lugo-Mohave line under the accelerated schedule, it became apparent that the original estimated cost of construction for this component would not cover the accelerated work. As a result, SCE refreshed its estimate of the cost needed to have Beta-Siemens complete the work under the accelerated schedule. In addition, SCE had also become increasingly concerned about Beta-Siemens's ability to complete construction work in an environmentally-compliant manner (particularly because SCE had received multiple notices of non-compliance from the CPUC regarding Beta). SCE also wanted to ensure the accelerated OPGW work was completed in a high-quality manner, especially given that a third-party inspection report raised questions about the quality of Beta's prior work on OPGW. All these factors prompted SCE to de-scope the remainder of the accelerated OPGW work on the California portion of the Lugo-Mohave line from Beta-Siemens, and rebid the accelerated work. SCE ultimately selected a new contractor, Barnard. The additional cost for Barnard to complete and expedite that work, and to do so safely, was $13.8 million.

With this acceleration and use of Barnard, SCE was able to successfully complete the OPGW work on the Lugo-Mohave transmission line by November 2021, ostensibly paving the way for SCE to in-service SC5 in December 2021, as scheduled.[51]

3. Emergent Issues (+$4.5M)

Separate from costs related to overhead expenses and OPGW acceleration, SCE also incurred additional costs associated with emerging issues, including work that was transferred from SCE to a contractor. The major factors driving the costs in this category include additional safety measures, environmental mitigation and monitoring costs, and added scope for work in the substations.

Table Emergent Issues-1 presents a comparison of the costs for additional project elements included in the MRPC approved in the Decision against the updated cost estimates for additional project elements included in this PFM.

Table Emergent-1: Emergent Issues
(Constant 2019 $millions)

a) CPUC Decision	$	-
b) SCE PFM	$	4.5
c) Variance (b-a)	$	4.5

Summary of Cost Change Drivers

The specific items that led to the increased costs included in this category are described below:

- ELM Substation Tie-Ins ($2.3M)
  Work related to interconnecting the Eldorado-Lugo and Lugo-Mohave transmission line into the 500kV Lugo Bus and the 500kV Mohave Bus was originally planned to be performed by SCE's own transmission construction resources, but that work was transferred to Bernard/Wilson.

[51] Ultimately, despite SCE's best efforts to keep the project on schedule by accelerating this OPGW work, the in-service date for SC-5 was further delayed as a result of a completely unrelated issue associated with delivery of MEER buildings. (See Section V.A.2., above).

- Fire Marshal Requirement ($1.8M)
  The services of a fire marshal were needed onsite during removal of existing overhead ground wire and installation of OPGW due to the type of work being performed and the geographic locations of the work in the event of an emergency. In fact, the presence of the fire marshal became eminently critical when a significant safety incident occurred during the OPGW installation. When transmission and telecom construction along the right-of-way was completed and there was no longer any need for an onsite fire marshal support, SCE promptly removed the fire marshal from service.

- New or Revised Plans Required by CPUC Mitigation Measures ($0.4M)
  Additional costs were incurred for preparation and submittal of new mitigation plans, and the revising of existing plans, to obtain a NTP from the CPUC.

- Baseline Data Collection ($0.03M)
  Additional costs were incurred as baseline surveys were conducted at all construction sites before the NTP was issued.

- MEER Building Enclosures ($0.02M)
  Additional costs were incurred to paint the three MEER building enclosures with a paint color requested by the BLM that was not readily available and had to be special ordered.

- Vehicle Repair Cost ($0.01M)
  Additional costs for vehicle repairs were made necessary due to site conditions along the Lugo-Mohave transmission line Right-Of-Way.

4. Pending Costs Subject to Resolution with the Contractor (+$30.4M)

The costs included in this subsection are associated with pending costs subject to resolution with SCE's contractor Beta-Siemens, namely: (a) $2.1 million for security services; and (b) $28.3 million for potential change orders submitted by the contractor in Q4 2022.

a) (+$2.1M) Security Services

Security services for the ELM Project include costs paid to the SCE approved vendor to provide security services. Table Security Services-1 presents a comparison of the security services costs included in the MRPC approved in the Decision against the updated cost estimates included in this PFM.

Table Security Services-1: Security Services
(Constant 2019 $millions)

a) CPUC Decision	$	-
b) SCE PFM	$	2.1
c) Variance (b-a)	$	2.1

Summary of Cost Change Drivers

SCE's jobsite work rules require the presence of security personnel on active construction sites to protect personnel and materials at the construction locations. Security personnel are responsible for keeping the site secure from theft or damage of construction materials and equipment and safeguarding the site from non-approved public entry/trespassers for safety and liability. The increase in cost of security services is directly tied to the ELM Project's extended schedule as security guards were needed at construction sites for longer durations than SCE originally anticipated.

However, at issue is the extent to which the security services were within Beta-Siemens' scope of work per the bid specifications from the request for proposal (RFP), making Beta responsible for the cost of such services. While SCE has paid for the security services initially, it anticipates recovery from Beta-Siemens for the cost of the services Beta-Siemens was required to provide under its scope of work. Despite the current uncertainty about the amount of the security services costs that should be allocated to Beta-Siemens versus SCE, SCE is nevertheless including the total cost paid for security services plus any remaining "to go" costs in this PFM in consideration of the Decision's direction that SCE seek any MRPC adjustment via the filing of a PFM before the MRPC is exceeded. Until the analysis of the amount to be allocated to Beta-Siemens has been completed and SCE has vetted and finalized these amounts with Beta-

Siemens, SCE is treating the full amount of the costs of security services as a potential cost liability and as such, has included this cost in the total amount requested in this PFM.

b) Potential Change Orders (PCOs) (+$28.3M)

In late 2022, Beta-Siemens submitted a number of PCOs, seeking from SCE additional amounts purportedly owed to Beta-Siemens to cover cost escalations associated with construction delays, changes in scope, and the acceleration of certain phases of the project. In the first half of 2023, Beta-Siemens escalated these disputes under the terms of the parties' engineering, procurement and construction (EPC) Agreement. SCE is in the process of assessing the recently-received PCOs, but to date has not received sufficient documentation from the contractor to substantiate the causes, accuracy, appropriateness and reasonableness of these requested change orders. Discussions with Beta-Siemens to resolve the disputed PCOs are ongoing.

The submission of these PCOs created an immediate potential $28.3 million dollar increase to the Project budget, and that increase is not accounted for in any of the costs identified in the preceding sections above. While SCE was aware that Beta-Siemens likely had some amount of outstanding PCOs it would seek to reconcile, SCE was not aware of the number of PCOs, or more importantly, the magnitude of the costs included in those outstanding PCOs, until late in 2022. In the first half of 2023, Beta-Siemens provided some documentation that it contends supports SCE's additional payment obligations under the EPC Agreement. SCE is in the process of reviewing that documentation and the PCOs. SCE has determined that if it approves some or the entirety of the PCOs, the additional costs paid would significantly impact the total ELM Project costs. Despite the ongoing uncertainty about the ultimate amount that might be paid pursuant to these change orders, in an abundance of caution SCE is including the maximum potential amount associated with these change orders in this PFM, in consideration of the Decision's direction that SCE seek any MRPC adjustment via the filing of a PFM before the MRPC is exceeded. While SCE believes that it ultimately may pay less than the full $28.3 million dollars claimed by Beta-Siemens, until the evaluation and analysis of the PCOs is

complete, SCE is treating the full amount of these PCOs as potential cost liabilities and as such, has included them in the total amount requested in this PFM.

c) Proposal for Addressing Pending Costs

SCE proposes the following two alternative procedures for addressing the costs associated with the security services and outstanding PCOs. First, should the CPUC rule on this PFM before SCE has completed its assessment of these costs, SCE proposes that the CPUC direct SCE to file an advice letter within 45 days following SCE's final resolution of its assessment of these costs which would allow SCE to "true-up" the actual payments agreed and made to or received from Beta-Siemens against the maximum payment authorized in this PFM and include the information necessary for the CPUC to determine the reasonableness of those payments. Alternatively, if the CPUC has not yet ruled on this PFM by the time SCE reaches a final resolution of its assessment of the outstanding costs, SCE could amend or supplement this PFM with any new information regarding these costs once they have been resolved with the contractor.

VI.

UPDATED COSTS BY PROJECT ELEMENT

For further transparency and ease of comparison against the MRPC established in the Decision, SCE has included Table 2: Cost Estimates by Project Element, below. Except as noted in the table and the accompanying footnotes, this table presents the costs approved in D.20-08-032 and the costs requested in this PFM by the same general project elements presented in SCE's amended opening testimony.[52]

The first column identifies the major cost categories of the Project. The second column shows the cost estimates for the project included in the CPCN Application and approved in D.20-08-032 as the MPRC for the ELM Project. The third column shows the costs presented in this PFM. The final column shows the incremental cost increase between the Decision and this PFM.

[52] *See* Exhibit SCE-1, at p. 33.

Table 2:Cost Estimates By Project Element

Cost Category	CPCN Decision	PFM Update	Variance (PFM-Decision)
Licensing	$16	$14	$(2)
Substation	$132	$154[53]	$22
Transmission	$32	$50	$18
Distribution	$1	$1	$(1)
Telecommunication	$15	$15	$(0)
Real Estate	$3	$1	$(1)
Environmental	$21	$22	$0
PCOs[54]	-	$28	$28
Contingency Applied[55]	-	$(8)	$(8)
Direct Cost	$220	$276	$57
Total Contingency	$19	$19	-
Total Cost	**$239**	**$295**	**$57**

VII.

FUTURE PIPELINE INDUCTION MITIGATION SCOPE AND COSTS

Despite the relatively minor adjustments to the physical scope of the ELM project identified in this PFM, the vast majority of the project's scope generally remains the same. Nevertheless, while SCE has prepared this PFM in order to comply with the Decision's direction that SCE seek an increase prior to exceeding the MRPC, SCE anticipates that a separate additional PFM may be necessary in the future due to additional work scope that has not yet been delineated and remains subject to ongoing analyses. Namely, to protect nearby SoCalGas

53 For simplicity, costs associated with the security services identified in Section V.B.4.(a) have been allocated to the Substation element.

54 PCOs do not appear in the original table included in the CPCN Application providing a cost estimate by project element. Once the final costs are agreed upon with the contractor, if the Commission has not yet ruled on this PFM, SCE will update this table to indicate where costs from any approved PCOs were allocated.

55 Contingency Applied amounts do not appear in the original table included in the CPCN Application providing a cost estimate by project element, but as discussed above, approximately $8.5 million of contingency funds have already been applied against incurred costs. That amount is included in Table 2 for transparency.

pipelines from the effects of induced alternating current (AC), SCE likely will have to install physical mitigation facilities, although the scope and cost of this mitigation is not yet known because SCE and SoCalGas are still evaluating the level of mitigation that will be necessary. SCE anticipates that a separate PFM to address the costs associated with the AC mitigation effort may be necessary once those details are known.

VIII.

CONCLUSION

For the foregoing reasons, SCE respectfully requests that the Commission modify D.20-08-032 to increase the MRPC for the Project to $295 million (2019 constant dollars). SCE respectfully requests that the Commission grant this Petition as expeditiously as possible.[56]

Respectfully submitted,

ROBERT D. PONTELLE
TAMMY L. JONES
LAUREN P. GOSCHKE

/s/ Robert D. Pontelle
By: ROBERT D. PONTELLE

Attorney for
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770
Telephone: (626) 302-6025
E-mail: Robert.Pontelle@sce.com

Dated: **May 24, 2023**

[56] Rule 16.4(b) requires that this Petition "propose specific wording to carry out all requested modifications to the decision." See Appendix A for such proposed wording.

Appendix A

Proposed Language to Support Petition to Modify D.20-08-032

REQUESTED CHANGES TO THE FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDERING PARAGRAPHS IN DECISION 20-08-032

SCE requests the following changes to the language of the Decision, findings of fact, conclusions of law, and ordering paragraphs in Decision (D.) 20-08-032, consistent with Commission Rule of Practice and Procedure 16.4(b). Requested deletions to existing text are in ~~strikethrough~~ and requested additions are in **underline and bold**.

Revise Language on page 34 of the Decision as follows:

For these reasons, we find that SCE's estimated MRPC, consisting of estimates of direct expenditures of $~~220~~ **$276** million, and a contingency estimate of $19 million, is reasonable and prudent**, pending further review of approximately $28.3 million of change order costs that were under review and awaiting resolution as of the time SCE filed a Petition for Modification in May 2023**. We adopt these costs as the maximum reasonable and prudent costs for purposes of Pub. Util. Code § 1005.5(a).

Revise Finding of Fact # 18 as follows:

18. SCE has presented its estimate for the cost of the ELM Project (in 2019 dollars) as $~~220,000,000~~ **$276,000,000** plus a $19 million contingency**, pending further review of approximately $28.3 million of change order costs that were under review and awaiting resolution as of the time SCE filed a Petition for Modification in May 2023**.

Revise Conclusion of Law #12 as follows:

12. The Commission should approve a maximum reasonable and prudent cost cap under Pub. Util. Code § 1005.5 of ~~$220~~ **$276** million plus a $19 million contingency for this project, subject to the direction set forth in this decision**, pending further review of approximately $28.3 million of change order costs that were under review and awaiting resolution as of the time SCE filed a Petition for Modification in May 2023**.

Revise Ordering Paragraph #4 as follows:

4. Pursuant to Public Utilities Code Section 1005.5(a), the maximum cost cap (in 2019 dollars) determined to be reasonable and prudent for Southern California Edison Company's construction of the Eldorado-Lugo-Mohave Series Capacitor Project is ~~$220,000,000~~ **$276,000,000**, and up to $19,000,000 in contingency costs as may be applied in accordance with the terms of this decision**, pending further review of approximately $28.3 million of change order costs that were under review and awaiting resolution as of the time SCE filed a Petition for Modification in May 2023**.

Revise Ordering Paragraph #10 as follows:

10. ~~Application 18-05-007 is closed~~**As soon as practicable, SCE shall submit, and serve on the official service list in Application 18-05-007, an advice letter detailing any and all change order amounts it contends should be appropriately included in a revised maximum reasonable and prudent cost cap. The maximum reasonable prudent cost cap otherwise established in this Decision remains subject to revision pending the Commission's consideration of the information provided in that Advice Letter**.

Add a new Ordering Paragraph #11 as follows:

11. Application 18-05-007 is closed.

Appendix B

Declaration of Selya Juliano Arce

DECLARATION OF SELYA JULIANO ARCE

I, SELYA JULIANO ARCE, declare that:

1. I am currently employed by Southern California Edison Company (SCE) as a Senior Project Manager in SCE's Major Construction department. My business address is 2 Innovation Way, Pomona, CA 91768. I have been employed by Southern California Edison Company for almost 18 years. My responsibilities include managing activities of several large projects with responsibility for results in terms of project scope, budget, schedule, and risk analysis. As part of my job, I am also the Senior Project Manager for the Eldorado Lugo Mohave (ELM) Project, and my responsibility in that role is to lead SCE's cross-functional project team responsible for licensing, engineering, and constructing the ELM project. Under my direction, the team's responsibilities include but are not limited to budgeting, scheduling environmental permitting/licensing, contractor retention and management, environmental compliance enforcement and preparation and implementation of post-construction requirements for the project. Pursuant to Rule 16.4(b) of the California Public Utilities Commission Rules of Practice and Procedure, I submit this declaration in support of the Petition for Modification (PFM) of Decision (D.) 20-08-032 being filed by SCE in Application 18-05-007.
2. I have been involved in various aspects of the Eldorado Lugo Mohave (ELM) Project as Senior Project Manager since February 2018 to present.
3. I have reviewed the PFM to be submitted in the above-referenced proceeding. This PFM asks the California Public Utilities Commission (Commission) to authorize an increase in the maximum reasonable and prudent cost set for the ELM Project in Commission

Decision 20-08-032 from approximately $239 million to approximately $295 million, as calculated in 2019 constant dollars.

4. To support preparation of the PFM, I provided the team preparing the PFM with information related to the ELM project background, the project team's assumptions regarding the project schedule, the history and timeline of events associated with the licensing and execution phases of the ELM Project, as well as decisions regarding construction process and strategy. Specifically, I either provided, or can attest to, the events giving rise to increases in cost calculations and estimates, including but not limited to: project delays, acceleration of optical ground wire installation work, revisions to ELM Project scope and interactions with SCE's contractors, as described in the narratives in PFM Sections III., V., VI and VII..
5. I have personal knowledge of the project history information discussed in paragraph 4 above, and if called to witness, I could and would competently testify thereto.
6. I supervised preparation of the materials referenced herein.
7. Insofar as the materials and information I provided to the team as referenced in paragraph 4 of this Declaration are factual in nature, I believe them to be correct.
8. Insofar as this material and information is in the nature of opinion or judgment, it represents my best judgment.

I declare under the penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge and belief.

Executed this 24th day of May, 2023, at Pomona, California.

By: */s/ Selya Juliano Arce*

Selya Juliano Arce
Professional Engineer and Senior Project Manager
Southern California Edison Company

Appendix C

Declaration of Jack Huang

DECLARATION OF JACK HUANG

I, JACK HUANG, declare that:

1. I am currently employed by Southern California Edison Company (SCE) as a Senior Manager in SCE's Project Control Major Projects department. My business address is 2 Innovation Way, Pomona, CA 91768. I have been employed by Southern California Edison Company for 13 years. My responsibilities include leading teams in development of project baseline costs. My duties include preparation of cost estimates for Bulk Transmission and Substation work, and cost review to ensure alignment with SCE's governing processes. I have held the following positions and responsibility on the Eldorado Lugo Mohave (ELM) Project – I oversee staff that develop the cost justifications, including cost details, for SCE's request to increase the MRPC. Pursuant to Rule 16.4(b) of the California Public Utilities Commission Rules of Practice and Procedure, I submit this Declaration in support of the Petition for Modification (PFM) of Decision (D.) 20-08-032 being filed by SCE in Application 18-05-007.
2. I provided financial support to the ELM project team in my role as a Senior Manager from March 2022 to present. In this role, I have provided certain project cost estimates and expenditure information to the project team.
3. I have reviewed the PFM to be submitted in the above-referenced proceeding. This PFM asks the California Public Utilities Commission (Commission) to authorize an increase in the maximum reasonable and prudent cost set for the ELM Project in Commission Decision 20-08-032 from approximately $239 million to approximately $295 million, as calculated in 2019 constant dollars.

4. To support preparation of the PFM, I provided oversight to the team that prepared cost information related to ELM Project expenditures and cost estimates. Specifically, I either provided, or can attest to, the cost calculations (including incurred costs and estimates for "to go" costs) identified in PFM Sections III., V and VI.
5. I have personal knowledge of the cost calculations discussed in paragraph 4 above, and if called as a witness, I could and would competently testify thereto.
6. I supervised preparation of the materials referenced herein.
7. Insofar as the materials referenced in paragraph 4 of this Declaration are factual in nature, I believe them to be correct.
8. Insofar as this material is in the nature of opinion or judgment, it represents my best judgment.

I declare under the penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge and belief.

Executed this 24th day of May, 2023, at Anaheim Hills, California.

By: */s/ Jack Huang*
Jack Huang
Senior Manager, Project Controls Estimating
and Project Cost Development
Southern California Edison Company